

CLAIMS

1. Method for qualifying gemstones whereby gemstones are discerned from one another on the basis of their electrical conductivity, **characterised**
5 **in that** at least a part of a gemstone (15,16,17) that is to be qualified is placed in the electrical field of a capacitor, whereby the electrical capacity of this capacitor is measured and compared to a reference capacity of this capacitor when a reference material (12) is placed in said electrical field, whereby said gemstone (15,16,17) is qualified as a gemstone with electrical conductivity when the measured capacity of
10 said capacitor, which comprises said part of the gemstone (15,16,17), is larger than said reference capacity.
2. Method according to claim 1, characterised in that, before said reference capacity is measured, a reference material (12) is used with a dielectric constant which is larger than that of the gemstone (15,16,17) to be qualified, and
15 which is preferably at least equal to that of diamonds.
3. Method according to claim 1 or 2, characterised in that, before said reference capacity is measured, a reference material (12) is used with a relative dielectric constant which is larger than 9.7.
4. Method according to any of claims 1 to 3, characterised in that,
20 in order to measure said capacity, or said reference capacity, the gemstone (15,16,17) to be qualified, or said reference material (12), is placed in the electrical stray field (6) of said capacitor.
5. Method according to any of claims 1 to 4, characterised in that, in order to measure said capacity, or said reference capacity, said part of the gemstone
25 (15,16,17) to be qualified, or said reference material (12) respectively, is placed within the measuring range of a capacitive measuring probe (1).
6. Method according to claim 5, characterised in that a measuring probe (1) is used comprising two concentric cylinders (2,3) made of an electrically conductive material, whereby the gemstone (15,16,17) to be qualified or said reference
30 material (12) is placed in the electrical stray field (6) formed on the edges (4,5) of said cylinders (2,3).

7. Method according to claim 5, characterised in that a measuring probe (1) is used comprising two coaxial electrodes (2,3) with a polygonal section, whereby the gemstone (15,16,17) to be qualified or said reference material (12) is placed in the electrical stray field (6) formed on the edges (4,5) of these electrodes (2,3).

8. Method according to any of claims 1 to 7, characterised in that said capacity is measured via at least one facet (11) of the gemstone (15,16,17) to be qualified.

9. Method according to any of claims 1 to 8, characterised in that said gemstone (15,16,17) to be qualified is electrically insulated in relation to electrodes (2,3) of said capacitor.

10. Method according to any of claims 1 to 9, characterised in that said capacitor is provided with a shield in order to prevent its capacity from being influenced by electrically conductive parts of a jewel in which the gemstone (15,16,17) to be qualified is set.

11. Method according to any of claims 1 to 10, characterised in that diamond is used as said reference material (12).

12. Device for qualifying gemstones whereby gemstones are discerned from one another on the basis of their electrical conductivity, in particular a device for applying the method according to any of the preceding claims, **characterised in that** it comprises a capacitor, whereby at least a part of a gemstone (15,16,17) to be qualified can be placed in the electrical field of this capacitor, whereby this device is further provided with a read-out unit (10) and a measurement converter (9) generating a signal as a function of the capacity of said capacitor, whereby this signal is displayed via said read-out unit (10).

13. Device according to claim 12, characterised in that it is calibrated in relation to a reference capacity value which is at least equal to the capacity value of said capacitor when a material with a dielectric constant which is larger than that of diamonds is placed in the electrical field of this capacitor, whereby means are provided for generating a signal when the measured capacity for a gemstone (15,16,17) to be qualified, placed in said electrical field, is larger than said reference capacity value.

14. Device according to claim 12 or 13, characterised in that said capacitor has an electrical stray field (6) whereby said gemstone (15,16,17) can be placed in this stray field (6).

5 15. Device according to any of claims 12 to 14, characterised in that said capacitor comprises a capacitive measuring probe (1).

16. Device according to any of claims 12 to 15, characterised in that an electrical isolator is provided between the gemstone (15,16,17) to be qualified and the electrodes (2,3) of said capacitor.

10 17. Device according to any of claims 12 to 16, characterised in that said capacitor comprises a shield in order to prevent its capacity from being influenced by electrically conductive parts of a jewel in which the gemstone (15,16,17) to be qualified is set.